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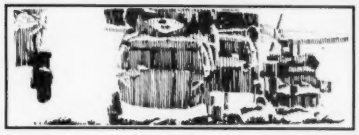

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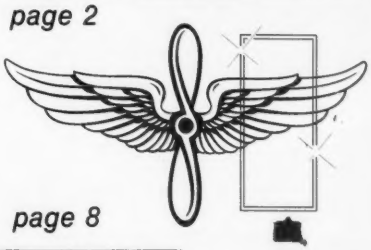

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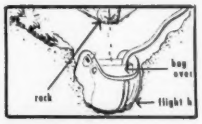

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Richard K. Tierney
Editor

Honorable John O. Marsh Jr.
Secretary of the Army

The mission of the *U.S. Army Aviation Digest* (USPS 415-350) is to provide information of an operational, functional nature concerning safety and aircraft accident prevention, training, maintenance, operations, research and development, aviation medicine and other related data.

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Articles, photos, and items of interest on Army Aviation are invited. Direct communication is authorized to Editor, *U.S. Army Aviation Digest*, P.O. Drawer P, Fort Rucker, AL 36362. Manuscripts returned upon request.

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YOU MAY HAVE noticed while holding this issue that it seems lighter and thinner; in fact it is. This month and some future months, the *Aviation Digest* will be reduced from the usual 48 pages to comply with a directive to reduce printing costs. Another cost reduction measure is less use of color. Nevertheless, the *Digest* staff will continue to present readers with a quality, professional periodical geared to keep you informed about current happenings and future trends concerning Army Aviation.

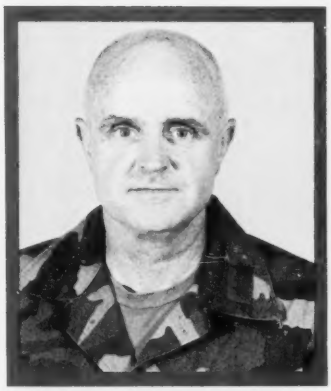
The lead article, "Combat Aviation Management System" by Captain William Chappell, describes this organization developed and tested by the 101st Airborne Division (Air Assault). CAMS provides flexibility and responsiveness to the combined arms team through centralized command and control of air assault aviation assets. It is ideally suited to plan, execute and control cross-FLOT operations.

CPT Ronald Buffkin gives his concepts about course subjects that should be addressed in "Creating The Aviation Officer Basic Course." He emphasizes the need for Aviation lieutenants to learn combat critical tasks such as the ability to make accurate, rapid tactical decisions; display flexibility; provide leadership; know effective helicopter emergency procedures; and, have skills in accurate tactical map reading. The Aviation lieutenant must be a combined arms officer more so than his counterparts in other branches; he needs to expertly understand the role of Army Aviation when integrated with the other combat arms.

"The AirLand Battle—An Opportunity to Excel" reminds us that the next war may begin during the next hour, not in the future when further advanced helicopters and other materiel come into being. As LTC Ollie Kennedy says, it will be a come-as-you-are war; so, we need to do with what we have, though the battle may involve conventional, nuclear or chemical weapons singularly or in any combination.

The 9th CBAA's "Air-To-Air; A Rude Awakening" by CW3s David Klindt and Victor Mustoe relates lessons learned by the 3/5 Cav while training in air-to-air evasive maneuvers at the Marine Aviation Weapons and Tactics School. The most important tactic is "not to be seen" by proper use of cover and concealment.

Finally, we at the home of the new Aviation Branch are conducting a contest to select a branch song. The song should be easily sung and adaptable to a marching arrangement. For more details, read "Army Aviation Song Contest" on page 7.



Major General Bobby J. Maddox
Commander, U. S. Army Aviation Center
Fort Rucker, AL

COMBAT AVIATION MANAGEMENT SYSTEM

This article describes all elements of the Combat Aviation Management System as developed and tested by the 101st Airborne Division (Air Assault). This organization is unique to the 101st. Certain elements of CAMS can be adapted to other units.

illustration courtesy of *Military Review*

Captain William S. Chappell
Assistant S3
101st Aviation Group (Combat)
101st Airborne Division (Air Assault)
Fort Campbell, KY

THE COMBAT AVIATION Management System (CAMS) has been developed and tested to provide command and control of aviation assets assigned or attached to the 101st Airborne Division (Air Assault). CAMS provides flexibility and responsiveness to the combined arms team by establishing a centralized command and control system for air assault aviation assets. All elements of CAMS are linked by radio communications using the combat aviation net (CAN) (figure 1), to provide reliable and responsive aviation support for the Air Assault Division. CAMS ensures positive control of aviation assets at all levels of employment.

The base building block of CAMS is the combat aviation team (CAT) located at maneuver company level. The CAT consists of a qualified pathfinder with a radio who is habitually assigned to the same air assault rifle company commander. This repetitive association develops the desired degree of teamwork required to integrate aviation expertise at all levels of command. The CAT can mark and control landing zones, pick-up zones and provide technical expertise for rigging and slingload preparation.

At battalion level the combat aviation party (CAP) is structured to assist the air assault infantry battalion commander in the use and control of aviation elements. The CAP consists of a combat-arms qualified aviator, normally a cap-

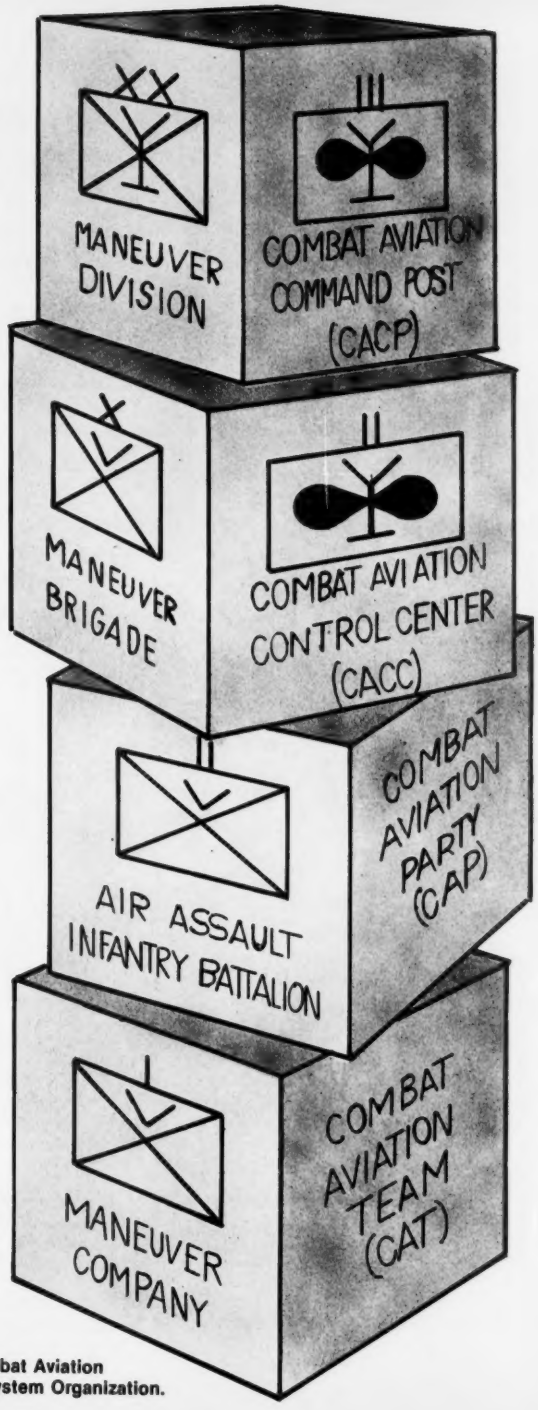


FIGURE 1: Combat Aviation Management System Organization.

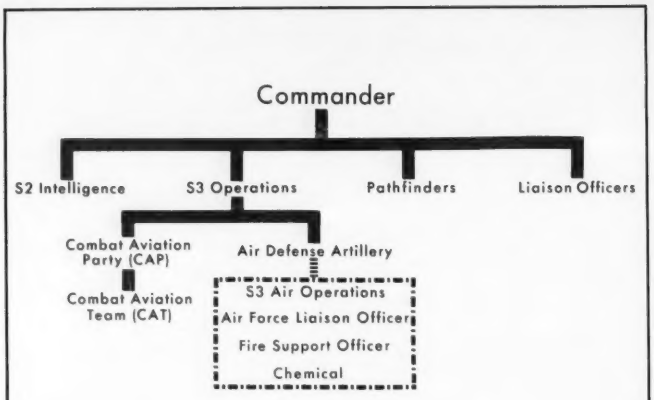


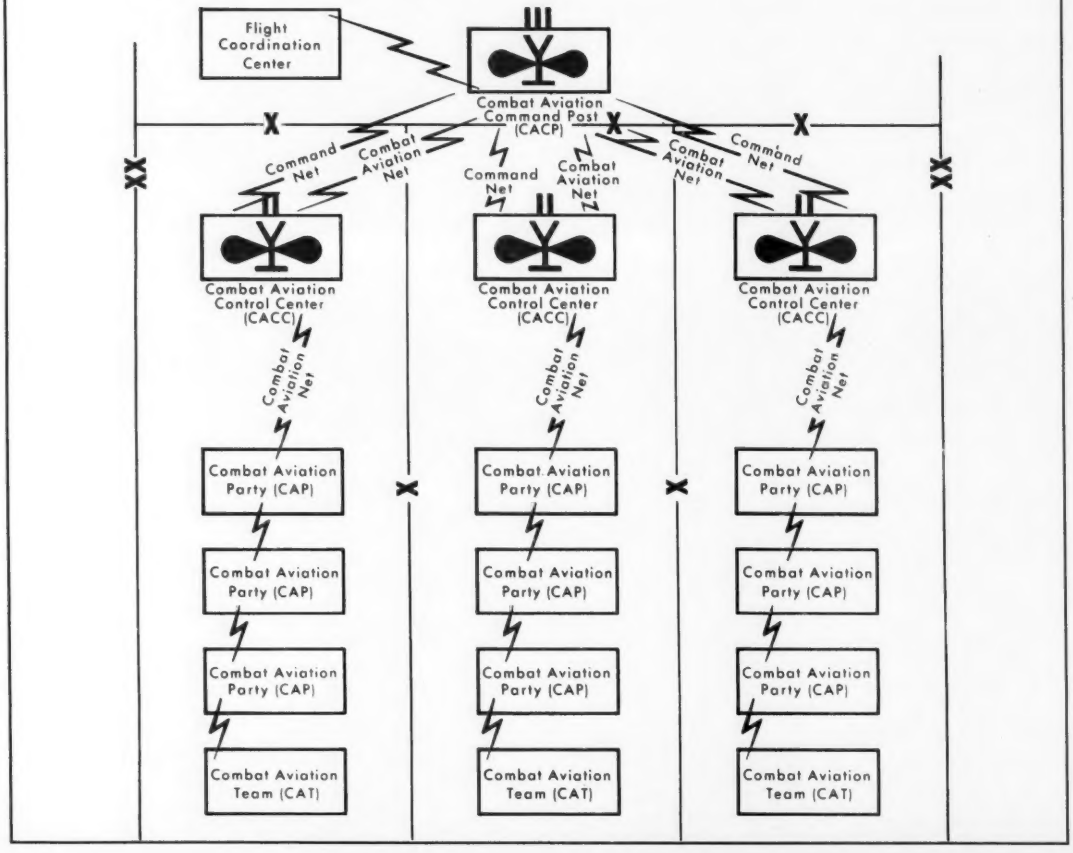
FIGURE 2: CACC Organization.

Assault Helicopter Battalion Headquarters (CACC) (Direct Support)

- ☐ 2 UH-60 assault helicopter companies
- ☐ 1 AH-1S attack helicopter company (operational control)
- ☐ 1 AH-1S air cavalry troop (operational control)
- ☐ 1 CH-47 medium lift platoon (operational control)
- ☐ 1 brigade aviation section (operational control)
- ☐ 1 UH-60 air ambulance section (operational control)
- ☐ 1 OH-58 target acquisition battery section (operational control)
- ☐ 1 Pathfinders platoon (operational control)

FIGURE 3

FIGURE 4: Combat Aviation Management System Communication.



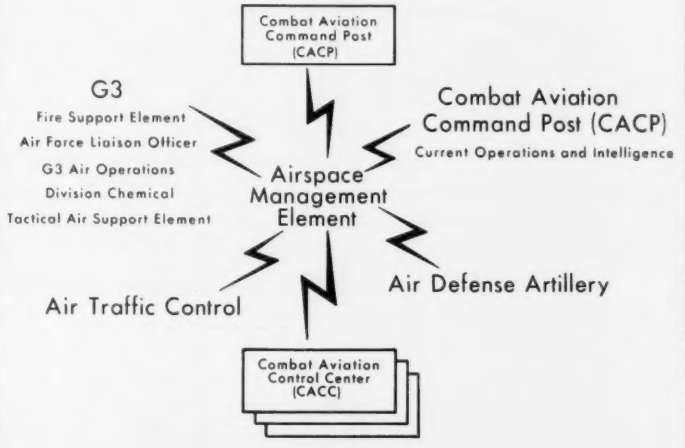
tain, two pathfinders and a vehicle with two radios. The CAP interfaces with the fire support officer (FSO), the battalion S3 and S3 air, to ensure the integration of fire support, aviation support and Air Force close air support. This provides the necessary coordination to employ aviation assets rapidly on the battlefield at a decisive time and place. The CAP also assists the infantry battalion S3 in preparing operations orders and plans so that tactical operations planning can be conducted concurrently rather than consecutively. This saves time and ensures that coordination has been accomplished to facilitate the timely employment of Army Aviation. The CAP normally will be assigned to the same maneuver battalion to develop cohesion and responsiveness with the battalion commander and his staff.

The next building block of CAMS is the combat aviation control center (CACC) (figure 2) located at each maneuver brigade headquarters. The CACC serves to assist the brigade commander and his staff with the integration of Army Aviation to support tactical operations. The Air Assault (ASSLT) Division normally will provide each maneuver brigade with a direct support aviation battalion headquarters to assist in the command and control of aviation assets task organized to the brigade. The elements depicted (figure 3) normally will be task organized under command of the assault battalion headquarters CACC.

These elements consistently support the same brigade in all phases of training and deployment exercises to further enhance cohesion between Army Aviation and ground commanders. However, depending on the situation, any aviation battalion in the division has the capability to perform the CACC mission. The direct support aviation battalion commander manages the CACC and has overall responsibility for all aviation support allocated to the brigade task force. This includes planning for tactical operations and logistics. The CACC maintains radio communication with his battalion CAPs and through him to the company CAT via the combat aviation net. Additionally, the CACC maintains communication with the combat aviation command post (CACP) (figure 4) so that changes to aviation task organization can be accomplished rapidly. The CACC also receives information and requirements necessary for airspace management in the brigade sector. He interfaces with the brigade FSO, the air liaison officer, the air defense liaison officer and the brigade S2/S3 elements.

To effectively manage the Combat Aviation Management System the 101st Airborne Division (Air Assault) has developed the combat aviation command post. The CACP is the focal point for airspace management command and control in the division tactical area of responsibility. The 101st Aviation Group provides the headquarters for the CACP and is augmented with liaison officers from the division cavalry squadron, the attack helicopter battalion and any maneuver aviation elements attached to the division for a particular tactical operation. The CACP coordinates

FIGURE 5: Channels of Communication.



with the corps airspace management element, fire support element, tactical air support element, assistant division air defense officer, G2/G3 elements, CACCs and liaison personnel. The 101st Aviation Group commander is responsible for establishing the CACP.

The assistant division aviation officer (ADAO) is a special staff officer on the division staff, and he is normally located in the CACP. He provides technical expertise to the division aviation officer and keeps him abreast of current and future division operations. The airspace management element (AME) (figure 5) assists the ADAO in carrying out his responsibilities and coordinates the use of all assigned division airspace. The AME also serves as the point of contact for the G3 on matters pertaining to airspace management, air defense and Army Aviation. Under the CACP structure the AME is one of the primary elements; the other primary element is the current operations and intelligence (COI) section (figure 6).

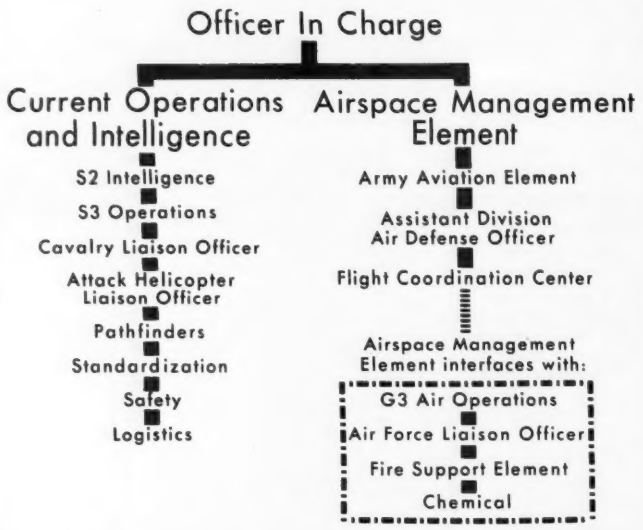
The COI maintains current information on the status of aircraft, aircrews, night vision goggles and aviation forward arming and refueling points to include ammunition and POL fuel stockage qualities. The current operations element also recommends employment of division aviation assets, provides division level aviation planning and targeting for future aviation operations, and provides aviation safety and standardization expertise to all division aviation units. The intelligence (S2) section disseminates intelligence data and aviation weather information to division aviation units.

The 101st Airborne Division (Air Assault) has tested the CACP during division level exercises and continues to refine the command and control procedures for aviation assets. In addition, future experiments with tactical automation of airmission briefings, airspace management control measures and aviation asset status reporting, under the auspices of the Army Command and Control Initiatives Program, hold the promise of real-time information flow and dramatically increased responsiveness.

The Combat Aviation Management System is a dynamic organization which facilitates the timely use of Army Aviation and is ideally suited for planning, execution and control of cross-FLOT (forward line of own troops) operations. This command and control structure enables the 101st Airborne Division (Air Assault) to enhance the mobility of maneuver and fire support units and assists the movement of supplies and equipment within the division. CAMS provides the combined arms team with the firepower and mobility to win on the modern battlefield.

"AIR ASSAULT"

FIGURE 6: Combat Aviation Command Post Organization.



ARMY AVIATION SONG CONTEST

THE ARMY'S NEW Aviation Branch at Ft. Rucker, AL, is conducting a competition to find its own song.

The competition is open to all persons 18 years old or older.

The Aviation song should be easily adaptable to marching arrangement for military bands at a standard cadence of 120 beats per minute and would be preferred in standard verse chorus, verse chorus format (no more than two melodies). The song must be easily sung by an average, untrained voice and be moderate in voice range.

The submission should be recorded on high quality cassette tape and the tape, along with full piano score and sketch score (lead line and chords) should be mailed to: Commander, U.S. Army Aviation Center, ATTN: ATZQ-P, Ft. Rucker, AL 36362.

All submissions must be received by 5 p.m., 1 May 1984. The winner will be announced 15 June 1984.

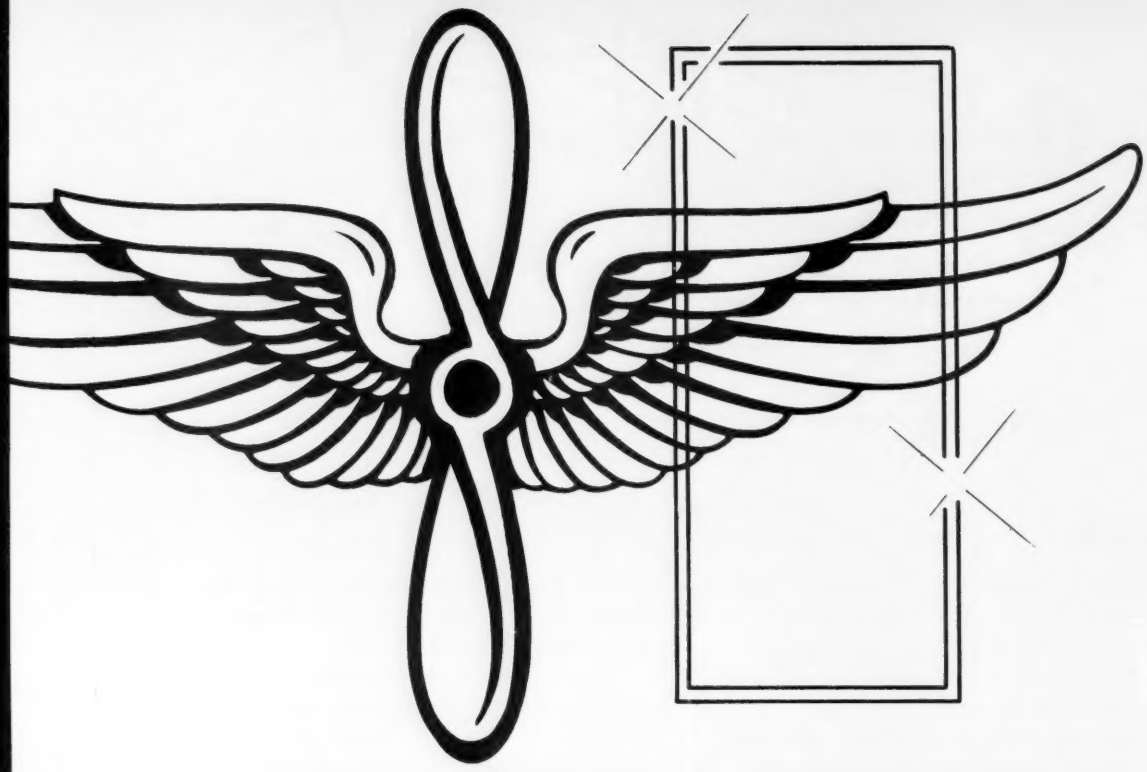
The winner must agree to copyright the song and assign the unencumbered copyright to the U.S. Army.

The winner of the competition will receive a $250 U.S. Savings Bond donated by the Ft. Rucker Chapter of the Army Aviation Association of America. The original sheet music, along with a photograph of the award ceremony, will be placed on display in the U.S. Army Aviation Museum at Ft. Rucker. The winner will be provided with travel expenses to and from Ft. Rucker.

In the event an acceptable submission is not received, a winner will not be selected.

For further information write the Aviation Proponency Office, Ft. Rucker, AL 36362, or call commercial 205-255-6360 or AUTOVON 558-6360.

All nonwinning entries will be returned.



Creating the AVIATION OFFICER BASIC COURSE

Captain Ronald M. Buffkin
U.S. Army Infantry School
Fort Benning, GA

The Aviation Officer Basic Course should provide instruction concerning tactics, leadership and combat arms operations while teaching technical skills required to master flying a helicopter.

IT IS 0700 HOURS on 24 August 1984. A group of second lieutenants from the 13th Company, 4th Battalion, TSB, Ft. Rucker, AL, fills several rows of bleachers in one corner of McNair Field. The Alabama sun still hasn't burned all the dew off the grass and green blades stick to to the spit-shined combat boots of the young officers as they fidget on the aluminum racks. The morning air is crisp and clean like the haircuts on the 30 lieutenants now seated. A broad-shouldered, muscular captain walks up to a small placard that reads, "INPROCESSING, AVIATION

This article is the opinion of the author and does not reflect how the U.S. Army Aviation Center will conduct the Aviation Officer Basic Course.

OFFICER BASIC COURSE" and waits for a flight of AHIPs to pass low over the field before he speaks.

"Good morning, lieutenants. My name is Captain Bernie Rybolt. I'll be your platoon trainer for the next 8 weeks here at your Aviation Officer Basic Course. It's my job to teach you the basics you'll need for IERW and your first assignment in a combat aviation unit. The next 8 weeks here will lay the foundation for your career as an Army aviator. This is the 1st Platoon of the 13th Student Company. We're the attack platoon. The 2d and 3d Platoons are air cav and assault respectively. You'll be broken down into four sections of seven aviators per section. You'll be rotated through all leadership positions found in an attack unit to include section leader, platoon leader and assistant operations officer. Before we begin in-processing, I'd like to introduce my assistant trainer, CW4 Bob Hill."

A greying, tanned warrant officer walks forward from the edge of the stands. He slowly draws a long puff from a nonfilter cigarette perched beneath a just-within-regulation mustache. A pair of mirror finished sunshades reflect the 30 officers carefully measuring the officer now before them. A star and wreath sit proudly above his aviator wings.

Assured that he has the undivided attention of the class, he levels his eyes at the young men and speaks with deliberate precision. "My job is to be your teacher. I want you to make mistakes here before you get to real units. Our time is extremely limited. You will spend all of flight school mastering the technical skill of flying a helicopter. Here you will begin learning to be a combat aviator. The 8 weeks here will be devoted to tactics, leadership and combined arms operations. Some of you will not make it...."

Recent decisions including the Aviation Branch Implementation Plan are making the above scene a reality. With the creation of the Aviation Officer Basic Course (AOBC), planners at Ft. Rucker are taking Army Aviation in the right direction. The AOBC will be followed by 36 weeks of initial entry rotary wing (IERW) for a total of 44 weeks of aviation intensive training. The total package will produce an Aviation lieutenant who understands and can apply Army Aviation to the combined arms team.

Army doctrine is clear on what a basic course is supposed to do. DA Pam 600-3, "Officer Professional Development and Utilization," states: "The basic course provides instruction related to the overall mission and function of the officer's specialty along with the technical instruction that provides the detailed knowledge and required skills associated with his/her specialty." We now realize that there was no course that did this for the Aviation lieutenant. The AOBC, however, will meet the requirements of DA Pam 600-3 by teaching our lieutenants their role in the combined arms scheme. The question is, what exactly do we teach the newly commissioned lieutenant during those critical first 8 weeks at AOBC? Recognizing the fact that the new lieutenant will not be a rated aviator during AOBC, what program of instruction will make best use of the 8 weeks at AOBC?

One possible model for the combat critical task that needs to be taught at AOBC can be gleaned from recent Israeli success with attack helicopter units in Lebanon. The summer issue of *ARMY TRAINER* featured an excellent synopsis of Israeli lessons learned regarding the training of attack helicopter crews. The training priorities they identified should be incorporated into our AOBC. To quote *ARMY TRAINER*, "The conflict demonstrated that certain tasks are critical to survive and win in battle, where operations often had to be conducted amid the confusion of combat. These tasks are:

- Accurate tactical map reading.
- Rapid tactical decisionmaking.
- Effective helicopter emergency procedures.

In sum, Israeli experience in the Lebanon conflict stresses the need to make tactical training of attack helicopter pilots simulate the confusing conditions of combat. The training must also place greater emphasis on:

- Leadership qualities.
- Flexibility.
- Ability to make accurate, rapid decisions."

If you're an attack helicopter sort-of-guy, you're probably saying, "So what, I could've told you that all those tasks are important." Well, right you are. The Israeli example reinforces what we've known all along. It should be pointed out that with the exception of the armed scout, Israel's attack helicopter units are very similar to ours. They also use the AH-1S and employ it like we do. The Israeli Defense Forces are winners and they win on

Creating the AVIATION OFFICER BASIC COURSE

the modern battlefield. They have proven the effectiveness of attack helicopters in a combined arms war. That is why it is particularly important that we institutionalize these training priorities in our AOBC from the start.

Let's look at each of these attack aviator tasks separately and see how they might be used to train aviators in the AOBC.

Accurate tactical map reading. The reports I've read coming out of the National Training Center at Ft. Irwin, CA, say that the failure of unit leaders to read a map correctly causes more tactical blunders than we'd like to imagine. Map reading is a vital skill for all aviators. One way to get our lieutenants well grounded in navigation skills is to teach them how to navigate, beginning in AOBC. Realistic practical exercises in AOBC coupled with making students responsible for navigation in IERW will help give the lieutenants valuable experience. This experience will reduce training time when they report to their first unit.

Flexibility. When the Israelis speak of "flexibility," two phrases from FM 100-5, "Operations," come to mind. First, it says, "An organization's flexibility is determined by its basic structure, equipment and systems." The second aspect of flexibility addressed in FM 100-5 says, "Commanders who are flexible rather than mechanical will win decisive victories." Aviation units are flexible by design. What we have to teach our lieutenants is how to be flexible on the battlefield and the way to teach flexibility is to ensure that they understand the dynamics of the battlefield. The roles of all elements of the combined arms team must be developed to a greater degree in Aviation lieutenants than in their ground counterparts. By providing the understanding of how all elements fight and how Aviation contributes, the AOBC can teach the flexible mentality required on the modern battlefield.

Effective helicopter emergency procedures. Because actual flight training occurs after AOBC, detailed training in emergency procedures will have to wait until IERW. However, emergency procedures have been identified as a combat critical task and the importance they have to Aviation training could be *introduced* in AOBC; a "Combat Emergency Procedures" block of instruction could be given during AOBC. In a classroom environment, students would learn the importance of performing correct emergency procedures by studying actual combat situations requiring immediate emergency responses in order to accomplish the mission. This block, although limited in scope, would provide motivation for the students when they progress to IERW. As an initial introduction, it could provide the "why" to the procedural training they'll get in IERW.

Rapid tactical decisionmaking. How do you teach the thought process that will produce sound tactical decisions? Several methods are in use at the Armor and Infantry Schools that could be modified for Army Aviation. For example, a war game of sorts developed for use at the 9th Infantry Division's High Technology Test Bed uses historical examples in a gaming format. This program is called "What Now Lieutenant?" and basically posed a tactical problem to the student by giving him the situation faced by a real character in history. The situations are nonspecific enough so as not to allow the student to know where the actual historical action took place. All scenarios were taken from true problems that faced a company level leader in combat. After the student group considered several solutions to the problem, one student would brief his solution using the terrain board. A group leader, who is usually an experienced captain, then briefs what actually happened in history. The purpose is not to arrive at a school solution, as in many cases what happened in the historical example did not conform to the leader's intended results. The object is to have an experienced officer guide a group of lieutenants through a tactical problem that requires future leaders of small units to think about tactics.

For example, a typical scenario might go like this: Your student group in AOBC is assembled around a large terrain board. The terrain board looks like lush, tropical jungle. Six UH-1 Hueys are at a small landing zone (LZ) on the terrain board. Your platoon trainer, Captain Rybolt, tells you that for this problem you're a section leader in a combat support aviation company. Your section has the mission of inserting a rifle platoon on a small LZ situated on a ridgeline 2,300 meters southwest of an abandoned airstrip. This LZ was selected because it was the only high ground that could accommodate six heli-

copters. The company commander of the rifle platoon was allowed a daylight overflight of the LZ the day before but neither you nor any of your pilots accompanied the overflight/recon. Bad weather postponed a first light assault on the LZ and it is now 0935 hours. A preplanned arty prep has just lifted fires off the LZ and you, in the lead ship, are inbound. As your skids touch down, two of your aircraft are hit by heavy automatic weapons fire with all troops still aboard. The rifle platoon leader, in your aircraft, was shot through the neck and is slumped over being attended to by your crewchief. What are your actions?

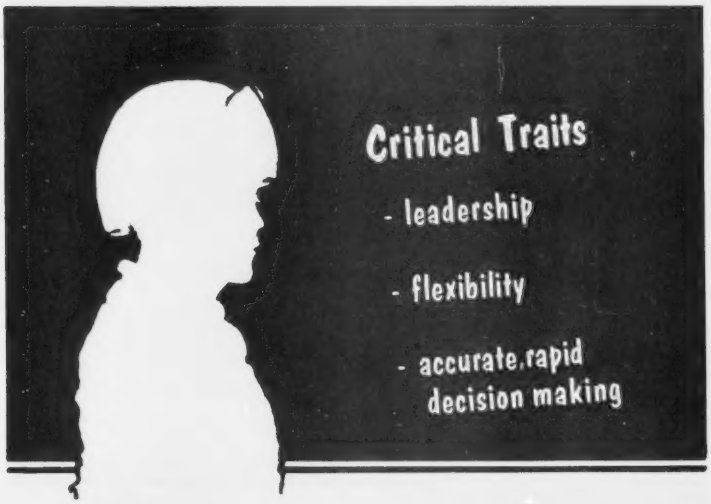
This scenario was adapted from (Retired) Lieutenant General John J. Tolson's fine book on the Vietnam War, "Airmobility in Vietnam." The situation actually happened on 9 August 1967 during an air assault by the 2d Battalion, 8th Cavalry of the 1st Cav Division. At this point, the student lieutenant would be faced with several dilemmas. Does he go ahead and land? If you were in that situation, what would you do? The LZ takes on a new dimension as you and your fellow lieutenants discuss several options. The platoon trainer rules out some options based on his intimate knowledge of the problem. After several students justify what they would have done based on their study and instruction in tactics, the platoon trainer stops action and reads what actually happened in history. On 9 August 1967, the aviators continued the mission and placed the platoon on the LZ resulting in the battalion achieving its objective. You can be sure that this exercise stimulates thought about making tactical decisions. It is not intended to replace tactical instruction. It is, however, an excellent way to teach lieutenants how to fight.

Leadership. The importance of leadership in combat aviation is a neglected aspect of our training. What AOBC will have to do is make leaders out of our aviators. If you've ever served under a truly outstanding leader, you can appreciate the difference it makes. Leadership is the key ingredient to fighting outnumbered and winning. Studies conducted of the Wehrmacht's combat effectiveness during World War II indicate that their superior leadership enabled the German small unit to remain cohesive and capable despite overwhelming odds. Military leadership is a learned skill. The successful commanders of our Aviation units today are leaders first and foremost. The AOBC must make leadership training a priority.

There are several methods of teaching leadership. The Leadership Reaction Course is in use by several armies to teach quick decisive leadership under pressure. A variation on this theme for Aviation could be made by the use of low-cost cockpit mock-ups with internal communications. All crew positions could be manned by student lieutenants and a selected leader would have to accomplish a task or react to a situation requiring leader influence. The student would then be evaluated by a cadre trainer and critiqued on his performance.

Another device that is currently in use by Infantry Officer Basic Course students at Ft. Benning, GA, is a counseling trainer. A video recording device places the student in a counseling situation where he must select the correct response from several options. The device takes the lieutenant through a series of situations requiring leadership to solve the problems.

The leadership counseling device would stress leadership of the Aviation warrant officer and his relationship to the combat aviation mission. It would place the lieutenant in a situation requiring his judgment, leadership and tact. For example, one video segment could be entitled "Additional Duties" and poses the problem to the student like this:



Creating the AVIATION OFFICER BASIC COURSE

The video begins with a CW2 walking in, having a seat and saying: "Look, sir, the Old Man just gave me this DF appointing me as the company crime prevention officer and it just isn't fair! My job is to fly, period. They don't pay me enough to have any additional duties and anyway, additional duties are a commissioned officer's job. I've never had an additional duty in the 2 years I've been here, I can't see starting one now." At this point the tape stops and the screen displays the following: "Your response to the CW2 is:

A. Don't bother me, Mister. I've got three additional duties myself. If you'd stop your bellyaching and just do it, we'd get along a lot better.

B. Look Bill, you know additional duties aren't such a big deal. I hardly ever put any effort into mine. Just file the DF in the trash can and if the Old Man ever asks you about it, just tap dance.

C. Additional duties are part of being an officer. They contribute to the unit mission and play an important part in the development of all officers. Crime prevention really helps our soldiers and besides, the Old Man probably picked you because he knows you can be trusted."

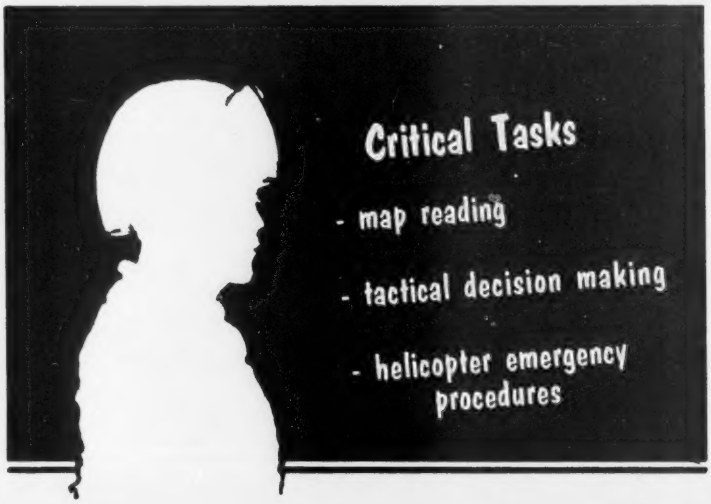
The lieutenant then chooses a response and the tape continues. The incorrect responses, in this example A and B, if selected would place the lieutenant in further over his head. The correct response solves the problem.

Another traditional means of leadership development and confidence building is by the use of Army schools such as Airborne, Ranger and Air Assault. All three courses are demanding, challenging and geared to develop self-confidence that is so vital to small unit leadership. Air Assault School is uniquely suited to giving aviators an appreciation of Aviation application to specific tactical problems. The recent institution of an Air Assault School at Ft. Rucker gives added opportunities for the Aviation lieutenant to develop as a professional. While Airborne and Ranger training are of less functional value to the aviator than Air Assault, allocations for these two courses could be made available to give selected lieutenants an opportunity to attend.

Leadership is the key to winning. Even in a technology intensive combat arm like Aviation, leadership is critical to the effectiveness of the unit. As General George S. Patton so aptly put it: "Wars may be fought with weapons but they are won by men. It is the spirit of the men who follow and of the man who leads that gains the victory."

In sum, there are three guiding principles that should drive the formation of our AOBC. These principles should be posted on the wall of every office, department and branch that has anything to do with developing such a course.

First, the AOBC must stress combined arms. The Aviation lieutenant must be a combined arms officer more so than lieutenants of any other branch. A graduate of the AOBC has to understand the role of Army Aviation as it relates to Infantry, Armor, Artillery and Air Defense. Second, the AOBC must be tactically oriented. Build credibility in from the start. The realities of the modern battlefield should be as much a part of our lieutenants' training as is the safe operation of their aircraft. AOBC should require them to prove themselves tactically competent. Third, the AOBC must be leadership dependent. It must produce leaders. In the long run, AOBC will be judged by the quality of the officers it gives to the Army.



The AirLand Battle

A combat zone where either or both combatants have used, are using or have the capability to use conventional, nuclear or chemical weapons singularly or in any combination to achieve a military objective.

The AirLand Battle— An Opportunity to Excell

Lieutenant Colonel Ollie D. Kennedy Jr.

LTC Kennedy was assigned to the Directorate of Training Developments, U.S. Army Aviation Center, Fort Rucker, AL, when he wrote this article.

HEY, YOU THERE! Yes, you with the sunglasses, large chronograph and star on your wings. Remember the good ole days of Army Aviation—1,500 feet above ground level and the war was basically over. In a good month you could pick up four Air Medals and 130 hours of flying out there hovering around at 6,600 revolutions per minute (rpm) in the old B, C, D or M model Huey. I want you to pay attention for a few minutes, and let's talk about the greatest challenge you've had yet.

Remember the field manual about employing aviation in the high intensity environment? If that appeared to be the challenge, let's talk about the *real* challenge.

CLARIFICATION OF BATTLEFIELD TERMS

Recently, there has been a proliferation of terms that conceptually describe battlefields on which modern forces may be required to fight. A brief description of those terms follows:

The Integrated Battlefield **is a generic description of a battlefield where *either* combatant has employed or could employ nuclear, chemical and conventional munitions, either singly or in combination. This definition has recently been expanded to include electronic and directed energy weapons.**

The Extended Battlefield **deals primarily with war in areas of the world where there are large numbers of relatively modern, well-equipped forces who use Soviet style doctrine and tactics. Extended battlefield describes the need to bring to bear the full range of friendly capabilities, to include deep-ranging sensors and weapons, with the goal of collapsing the enemy's will to fight. Enemy units not yet in contact are brought under deep attack in order to destroy, disrupt and delay their scheduled commitment to battle. The concept recognizes that the deep and the close-in battles are inseparable and must both be prosecuted within the commander's overall objectives.**

AirLand Battle **ties together ideas from concepts for the Integrated and Extended Battlefields and applies them conceptually to the battlefield visualized for the 1980s. The main theme is to win through early initiative of offensive action by joint air and land forces. The key to modernization as set forth in the AirLand Battle Concept is based on Division '86 materiel and force structure requirements. While full implementation of the AirLand Battle Concept is scheduled by 1986, many of its ideas can be implemented today with current assets.**

Army 21, **formerly known as the AirLand Battle 2000, is an evolutionary maturing of the precepts of the AirLand Battle, describing trends and environment for the Army for the year 1995 and beyond. The essence of this concept is agility whereby the enemy's will to continue the conflict is collapsed by presenting him with new tactical situations faster than he can react. This concept brings to fruition the guidelines of the Concept Based Requirements System whereby conceptual notions dictate the development of systems and forces necessary for implementation.**

The AirLand Battle is going to be the thing of the future, but the future may be this afternoon. Sure, there are a lot of items down the pike that will help, but this may be a come-as-you-are war—so let's discuss the problems.

First, let's attempt to settle on a definition. The AirLand battlefield or *the integrated battlefield is a combat zone where either or both combatants have used, are using or have the capability to use conventional, nuclear or chemical weapons singularly or in any combination to achieve a military objective.*

That should eliminate any ideas that this is a Buck Rogers future concept. This is an historical and present day situation. The Army aviator and his aircraft play an even more significant role in this environment than they have in the past. Like Superman we can, in a single bound, leap over the obstacles created by nuclear blast, radiation hot spots and chemically contaminated areas. But even Superman has to watch out for Kryptonite, and let me tell you supermen that there's going to be an adequate supply of Kryptonite on this integrated battlefield.

Up to this point we talked about the older (I hate that term) aviator. But this discussion is just as important to you aspiring aviators without the wings on the velcro-backed leather plate on the front of your Nomex flight suit. Yet, you are potentially going to have to face this challenge immediately upon becoming an Army aviator.

Without getting into too much detail, let's think about some of the problems peculiar to aviation and possible solutions. As I said earlier, while this is a challenge, we can operate above the AirLand battlefield with some changes in ideas, techniques and tactics.

The idea of incorporating other than conventional munitions into battles as a routine matter is not new. FM 100-31, dated November 1951, discusses planning and consideration of enemy capabilities in tactical operations. The standing operating procedure was con-

sidered the appropriate place for guidance. If you feel that no one would use anything other than conventional weapons because of the fear of the end of mankind or for any other reason, let's think for a minute. Chemical munitions were used a great deal during World War I and were very effective and efficient. The Soviet Union probably was punished the worst by these weapons, and its current capabilities for offensive use and defensive protective capabilities indicate a lesson learned. *Time* magazine has reported that the Soviets have used some chemical agents in Afghanistan.

The United States is the only country in the world that has used an atomic weapon in warfare. The monopoly the United States held 35 years ago certainly does not exist today. If a conflict flares up at almost any place on earth, at least one of the belligerents will have a nuclear capability. The number of nations with this capability increases practically every year, and there are no indicators that this trend will change. So far, most of our adversaries are rational either as individuals or collectively. But, what do we do if a country such as North Korea obtains a nuclear capability? All I am trying to point out is that all of the world's battlefields are integrated, and it's time we settled down and prepared ourselves to operate on such a battlefield.

OK, now what do we face as aviators? We face an environment where flash blindness and dazzle are as possible as a summer afternoon rainshower at Ft. Rucker. The blast effect of nuclear fires will be a real hazard to anything up in the air. The radiation and heat effects will also change the air to a hostile environment at greater ranges than we're accustomed to operating in.

On the chemical side of the house, we will be exposed to agent clouds and contaminated areas on the ground. Can you imagine the effect of the CH-47 rotor wash on a loose dirt contaminated area?

We will be flying nap-of-the-earth, therefore any persistent agent will be disturbed as we move through an area. If we try to fly a few feet higher to avoid the chemical agents, we'll be greeted by the conventional threats.

The ZSU-23-4 and SA-7 will always be looking out to get you if you are anywhere near the forward line of own troops.

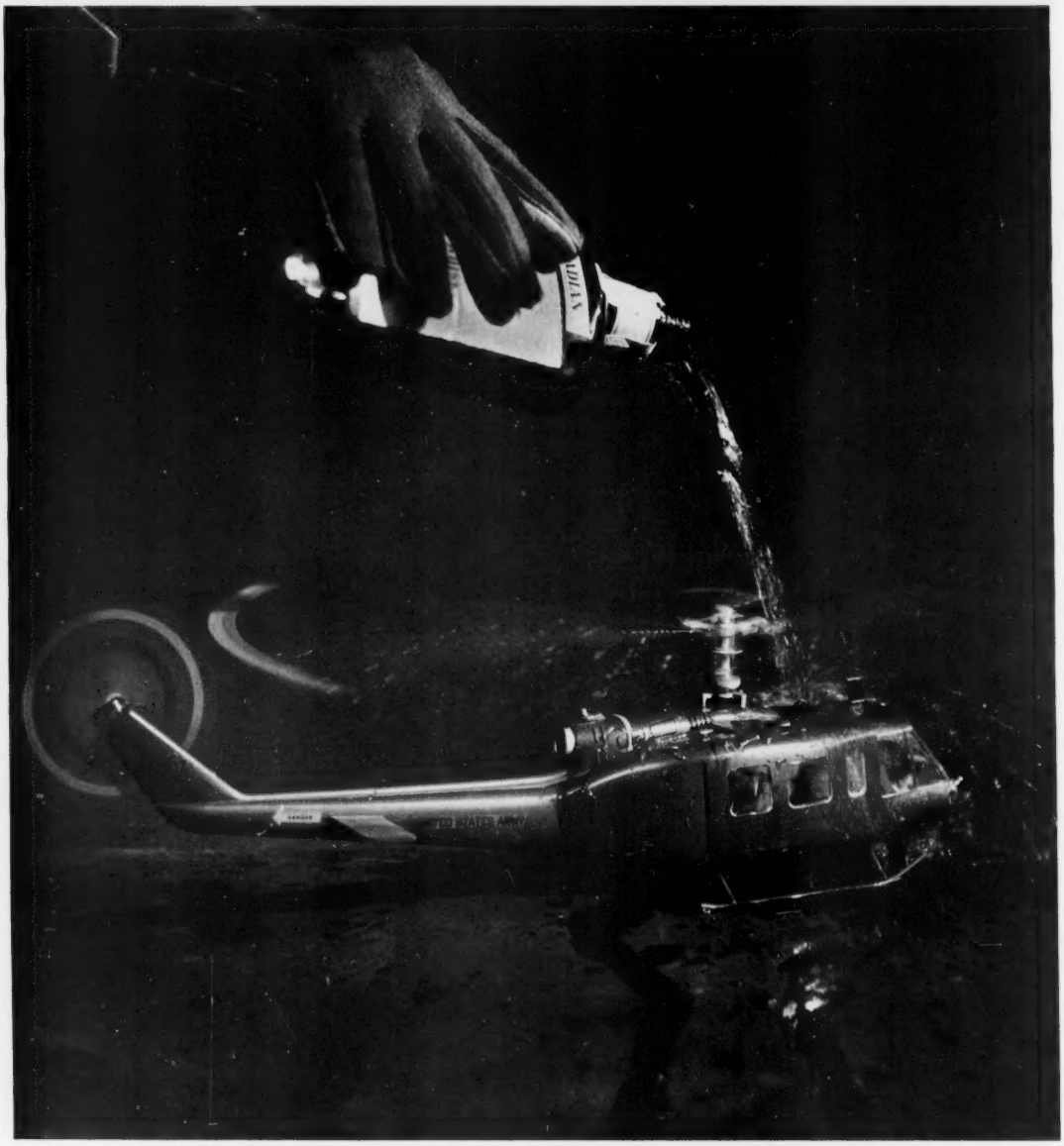
All of this sounds depressing, but the situation is far from hopeless. We have equipment currently in the inventory that will help. Other items such as the AN/APR 139, chemical detectors, protective suits and masks, etc. will give us assistance. There are a lot of items that will be available in the near future that will overcome most of our current problems in this environment. There are two more areas that we can do something about now and continue with in the future. These areas are training and attitude. Let's discuss training first.

We can include the integrated battlefield in our institution and unit training even before new Army Training and Evaluation Programs and doctrinal manuals are distributed. We aviators have always taken pride in our ability to look forward and keep an open mind to new concepts. So, train with what we have now! Put one pilot in the cockpit with the protective suit, mask, gloves and boots on. See what it's like. Try both pilots in the synthetic flight training systems with full MOPP 4 (mission oriented protection posture) gear on. Now, if you're beginning to think that it can't be done, then you're at my next point—attitude!

A positive, can-do attitude is necessary to get the job done. We can still do the job! We will have to work on some new techniques and procedures, but it can be done. We've been fully accepted as a branch and a combat arm, and the integrated battlefield is going to demand more from us for successful operations. We have to be ready right now with what we have. The scenario for the next war could match our strategic requirements of the 1980s; i.e., day 1—deter, day 2—fight, day 3—terminate successfully. So, let's train now with the people we support in the full integrated battlefield scenario. Show them how our capabilities can help them overcome some of their dilemmas, but ensure that they understand the additional constraints placed on us by analysis of this integrated threat potential. None of this is new; we have just always addressed the nuclear, chemical and conventional separately. This is no longer acceptable! So, let's get the 175 flight plan filed and get on with it.

Think of the potential war stories! There I was, 90 knots, 3 feet AGL, NUCS going off to my left, an agent cloud to my front and two Hind-Ds latched on my tail....

Alcohol And The Aviator



AS MAINE GOES, so goes the nation." That old maxim held true in 1884 when Maine passed a prohibition amendment to the State constitution. Maine's experiment brought prohibition to the forefront as a political issue in other localities as many other states and towns passed similar laws. It was 35 more years, January 1919, before the Eighteenth Amendment to the Constitution of the United States was passed (to become effective a year later). Manufacture, importation, exportation, transportation, or sale of alcoholic beverages in the United

States and its possessions became a violation of Federal law—a law that never worked because it was to a great extent unenforceable. The amendment was repealed in December of 1933.

The Army isn't attempting to bring back prohibition but it is trying to control abuse of alcohol. There is a definite trend to get tougher on alcohol abuse and use of drugs and to hold people accountable for their actions.

Alcohol abuse isn't a new problem by any means but it is a problem of increasing concern in civilian communities and to all of the military services. It affects the very young (there are actually 12-year-olds who go to school drunk or hungover) to the very old. Ironically there's some evidence that as drug use decreases, abuse of alcohol increases.

There are 25,000 people killed in alcohol related automobile accidents every year. Public attention and outrage have influenced lawmakers and state after state has enacted more stringent laws against drunk drivers with violators facing the prospect of mandatory jail sentences in some cases. Arrests for drunk driving increased from 561,000 in 1969 to 13 million in 1981.

Let's suppose that you are a moderate drinker and you seldom drive after you've had a few drinks. Seldom doesn't count when the blue light flashes and you're pulled over. Legal intoxication may be .10 of 1 percent blood alcohol content, but you can be legally intoxicated with .05 if the arresting officer believes you are impaired. You can be charged with DUI and even if it happens off-post, a report will go to your military installation. At the very least you will lose the privilege of driving on the post. Incidentally, it doesn't matter if you're a soldier or a DA civilian employee—it applies to both.

In spite of the increase in arrests for drunk driving, you may be one of the 1,999 drunk drivers who evade apprehension for every one arrested. You may be so lucky that you'll never be involved in an accident where a child, a mother, or maybe a whole family dies because you drove after drinking. Your luck may be so good, in fact, that you won't kill yourself in an accident. But do you want to depend on luck to determine whether you have a future?

How about flying after drinking? If your reaction to that question is a scornful, "You gotta be kidding," you've got the right idea. However, if you're still relying on some catchy nostrum like, "12 hours from bottle-to-throttle," you need to consider some more facts.

In the first place, a blood-alcohol level of .05 while you are on duty can be grounds for court-martial. That's an example of how tough the Army is really getting. In addition, there are a lot of variables that affect how fast your body metabolizes alcohol. Before you assume 12 hours is long enough—How much did you drink? How large are you? Did you drink on an empty stomach? The 12-hour rule was intended for social drinking, not a night of buying rounds for the boys. Just to be safe, you'd better add an hour to that 12 for every drink you had. If you're a really hard drinker and you're saying, "At that rate, I'll never get in the cockpit," you're again getting the right idea.

So you're a moderate drinker, you set your limits and you stuck to them. You had four drinks, went home at 2300 and it's early afternoon of the next day so you're ready and able to fly, right? Maybe not. Drinking performance tests by researchers for the National Swedish Road and Traffic Research Institute found impairment persists for at least 3 hours after all the alcohol has been metabolized and is still evident well into the next day—in fact for as long as 24 hours. They also found that impairment in driving performance had little to do with the driver's feelings of hangover effects.

No one has to point out to you the skills required for flying compared to driving a car. The effect of alcohol on vision, reaction time, reasoning and judgment for vehicle operators is multiplied by the demands of the cockpit. Even when alcohol is not a documented cause factor in an aircraft mishap, who can say whether an aviator's slow reaction, faulty perception or error in judgment started with "happy hour" the night before?

One of the latest developments in the Army's crackdown on alcohol and drugs is a HQDA message, dated 13 Nov 83. The message, which incidentally applies to ground accidents as well as aviation mishaps, clarifies use of biochemical test results from accident participants and highlights existing procedures which allow commanders to ascertain fitness for duty while also obtaining evidence of drug or alcohol use by persons involved in accidents.

If a commander has a reasonable suspicion that the servicemember used controlled substances or alcohol, he is authorized by par. 3-16, Interim Change 102 to AR 600-85, 11 Feb 83, to direct a fitness for duty examination. An order to submit to such an examination is a lawful order and violation may become grounds for disciplinary and/or administrative action.

The fitness for duty examination may include a complete physical or it may be limited to biochemical testing of urine,

blood and breath. Test results may be used for reclassification, removal of security clearance, bar to reenlistment, removal from duty position, line of duty investigation, report of survey, letter of reprimand, efficiency ratings, flight evaluation boards and on the issue of separation in separation proceedings. Results of such command directed examinations for the purpose of determining fitness for duty are common source information and they are available for use by all who have an official need.

Following an aviation mishap there is a requirement for all crewmembers and anyone else injured in the mishap to submit to a Type B aviation physical. Par. 10-26g(3) of AR 40-501 specifies that a medical examination of crewmembers will be conducted if the slightest possibility exists that human factors or medical considerations have been instrumental in causing the mishap, or these conditions should otherwise be investigated. The extraction of blood and urine samples is part of the Type B examination procedure. A future article will describe how the taking and maintaining of such samples under chain-of-custody will provide evidence to discipline or take administrative action against aviation personnel who use illegal substances or take nonprescribed medications.

If a commander does not direct blood and urine testing of an accident participant, accident/safety investigating officials may direct testing when necessary. Par. 1-9a, AR 385-40, 1 Sep 80, prohibits the use of safety reports or their attachments as a basis for adverse personnel actions. This prohibition applies to those documents initiated or prepared by accident investigation officials.

Blood/urine samples are forwarded by medical officers to the Armed Forces Institute of Pathology (AFIP), or other laboratories, for testing for drugs, carbon monoxide, poisons and alcohol. Reports from testing are furnished to the submitting medical treatment facility and to the U.S. Army Safety Center.

Commanders and safety officials responsible for reporting Army aircraft mishaps and ground accidents should be aware of existing requirements to report the results of biochemical testing for alcohol, illegal drugs, or self-medication on accident reports.

Clarification contained in the message will be included in the next change to AR 385-40. POC at the U.S. Army Safety Center is MAJ Karl Ivey, AUTOVON 558-3960.

The Army is rapidly working to change the hard-drinking, derring-do aviator image. When you climb into today's high-technology, million dollar plus aircraft you're expected to be a professional who follows procedures and regulations. That doesn't mean your experience doesn't count or that you won't have to be innovative on occasion to cope with emergencies and situations that can't be predicted. It does mean that you will have to make some conscious choices. One of these may be between a bout of serious drinking versus having all of your faculties and skills honed to the razor sharpness today's aircraft and today's Army demand. You've survived quite an attrition process just to become an Army aviator and again every time you take off on a mission. It's your choice—to *be all that you can be,* or another statistic.

Additional sources

"Alcohol and Marijuana Films Released," **Flightfax,** 23 Nov 83.

"Flight Plan to a Dead End—A True Story," training film (VT) 46-6295, running time: 17 min., 2 sec. Stresses adverse physiological effects of marijuana use in general, with dramatic emphasis on the degradation of mental and physical abilities of aviation personnel to perform their jobs safely.

"Alcohol, Aviators, and Accidents—A Problem of Attitude," training film (VT) 46-6296, running time: 23 min., 13 sec. Dramatization of an actual aircraft accident case from the files of the Army Safety Center. This film stresses the degradation of mental and physical abilities of aviation personnel to safely perform their duties because of the alcohol hangover.

The new aviation safety films dealing with marijuana and alcohol may be obtained from your local Training and Audiovisual Support Center. Every pilot, those people involved in maintenance, air traffic controllers and supervisors of aviation personnel should see these films.

Aviation Proponency Office

Major Bob Christensen
Deputy Chief, Aviation Proponency Office
U.S. Army Aviation Center
Fort Rucker, AL

ARMY AVIATION personnel are, for the first time, playing a key role in developing personnel policies that directly affect their force structure, force management and individual professional development.

A proponent is that individual or organization assigned primary responsibility for providing recommendations to the Department of the Army (DA) concerning military professional development and changes to personnel management policies. Proponents have been designated for each occupational specialty in the Army. The commander of the U.S. Army Aviation Center has been assigned the responsibility for Aviation specialty proponency. This responsibility is carried out by the Aviation Proponency Office.

Before October 1981, proponency was a DA staff responsibility. In the case of Aviation, the deputy chief of staff for operations was the proponent. At that time, proponency only concerned commissioned officers. The delegation of this responsibility, with its inherent authority and its expansion to include warrant officers and enlisted personnel, introduced a new way of getting things done—the Aviation Proponency Office.

The Aviation Proponency Office is responsible to the Aviation School commandant for all Aviation Branch Officer Specialty Codes (SC 15 and 71), warrant officer military occupational specialties (MOS series 100, 150 and 160) and career management field (CMF) 67 and the soon to be established CMF 93. A study is ongoing to evaluate inclusion of CMF 28 in the Aviation Branch.

An integral part of the Aviation proponency system is the Proponency Office at the Aviation Logistics School (ALS), Ft. Eustis, VA. Working for the deputy assistant commandant, ALS executes personnel management and specialty proponent functions and responsibilities for the Aviation Center for SC 71, the "T" position of 15F, MOS 160 and CMF 67. The Logistics School Proponency Office coordinates actions in these areas with the Aviation Center Aviation Proponency Office.

Through the Aviation Proponency Office, the Aviation Center can incorporate Aviation related considerations into the life cycle personnel management policies, programs and procedures established subsequently by DA.

The Aviation proponent is charged with gathering and evaluating information, identifying issues, setting priorities, formulating alternatives, coordinating actions and obtaining improvement in each step of the life cycle personnel management process.

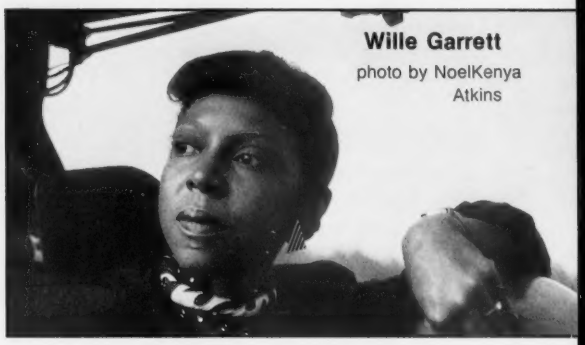
If you have suggestions or recommendations in this area you may forward them to Commander, U.S. Army Aviation Center, ATTN: ATZQ-P, Ft. Rucker, AL 36362. After your suggestion or information is analyzed, it may be brought before the Aviation Proponency Committee as a potential "initiative." Initiatives approved by the committee are developed into recommended policy changes. Through this system, the Aviation community can better influence the future of the Aviation Branch.

Commissioned officers, warrant officers and enlisted aviation personnel are now involved with designing their own personnel management policies. If you have suggestions or concerns in this area, write us.

The Aviation Proponency Office ensures that the proponent, the entire Aviation School and Aviation Logistics School, carries out its responsibility as the voice of the total Aviation force.

PEARL'S

Personal Equipment And Rescue/survival Lowdown



Wille Garrett
photo by NoelKenya Atkins

ALSE School

The Aviation Life Support Equipment (ALSE) School is now 2 years old and is in full swing, continuing to conduct training courses in ALSE concerning inspection, maintenance and repair of the critical equipment. Visits by staff personnel and members of the ALSE System Management Steering Council revealed the dedication and determination of the enthusiastic instructors to give the type of quality training we have come to expect.

If you have any questions or need assistance in the area of ALSE call AUTOVON 927-4462/2475.

ALSE Pamphlet

The ALSE Pamphlet is finally in print and we hope to have it mailed to you by the time you read this article. We apologize for the delay, but feel it will be worth it.

First Aid for the Eyes

Sulfacetamide sodium ophthalmic ointment, USP, national stock number (NSN) 6505-00-183-9419, is located in aircraft, first aid kits, survival kits and survival vests. With such a wide distribution of this medicine, here are some notes that might be of assistance.

- If the ointment has been frozen, thaw completely at room temperature before using. DO NOT HEAT to hasten defrosting, this will result in the chemicals separating and may do more harm than good.
- If the ointment has been heated, sitting in an aircraft in the hot sun, for instance, where the temperature has exceeded 85 degrees F, check the ointment for separation or discoloration before using. If there is separation or discoloration, DO NOT USE.
- Before using, check the tube for expiration date printed in the yellow box on the bottom part of the tube or pressed into the metal crimped edge sealing the tube.

TSARCOM—AVRADCOM Reorganization

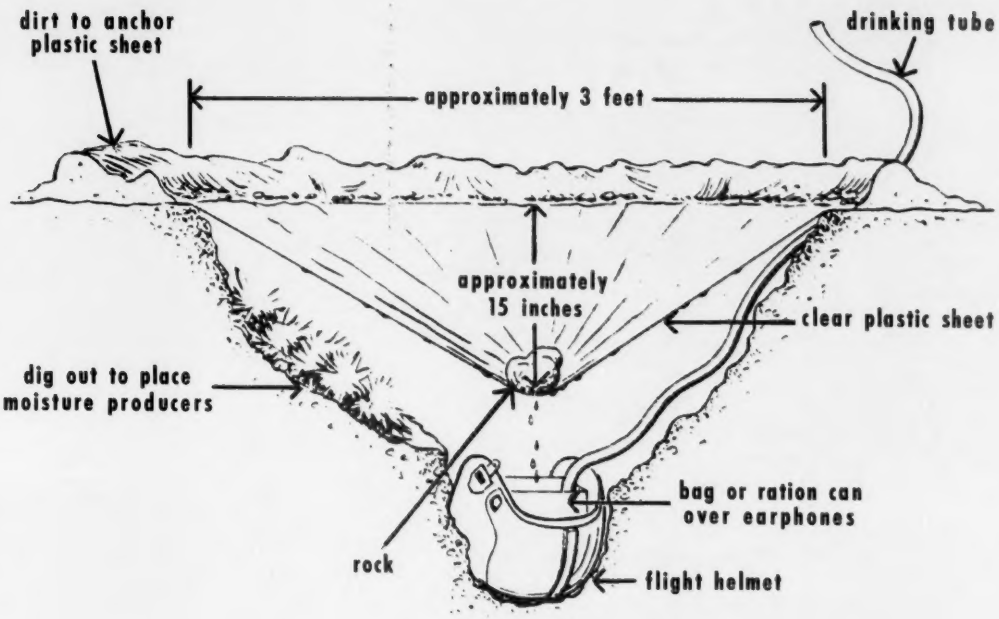
U.S. Army Troop Support and Aviation Materiel Readiness Command (TSARCOM) and the U.S. Army Aviation Research and Development Command (AVRADCOM), St. Louis, MO, have reorganized into U.S. Army Troop Support Command (TROSCOM) and U.S. Army Aviation Systems Command (AVSCOM) respectively. The DARCOM Project Office for Aviation Life Support Equipment is moving to AVSCOM. We are physically moving to another building with new telephone numbers. The address for PEARL is the same, however, our new telephone number is AUTOVON 693-1218/1219. Maintenance questions pertaining to ALSE should be directed to Boone Hopkins, John Abernathy or Jim Angelos, DRSAV-MCAPS, AUTOVON 693-3880.

Solar Still

For your drinking pleasure, the item at right was condensed from AFM 64-5 and FM 21-76 survival manuals. Also, a fully illustrated article, "Little Ole Watermaker Me!" was carried in October 1965 *Aviation Digest*. A copy can be obtained by writing to Editor, *Aviation Digest*, P.O. Drawer P, Ft. Rucker, AL 36362.

If you have a question about personal equipment or rescue/survival gear, write PEARL, DARCOM, ATTN: DRCPO-ALSE, 4300 Goodfellow Blvd., St. Louis, MO 63120, or call AUTOVON 693-1218/9 or Commercial 314-263-1218/9.

Solar Still



Dig a bowl-shaped hole in the soil about 40 inches in diameter and 20 inches deep. Add a smaller, deeper sump in the center bottom of the hole to accommodate the container. If polluted waters, such as body waste, are to be purified, a small trough can be dug around the side of the hole about half way down from the top. The trough ensures that the soil wetted by the polluted water will be exposed to the sunlight and at the same time that the polluted water is prevented from running down around or into the container. If plant material is to be used, line the sides of the hole with pieces of the plant or its fleshy stems and leaves. Place the plastic film over the hole and put a little soil on its edges to hold it in place. Place a rock no larger than your fist in the center of the plastic and lower the plastic until it is about 15 inches below ground level. The plastic will now have the shape of a cone.

> **CAUTION**
> Make sure the plastic cone does not touch the earth anywhere causing loss of water.

Put more soil on the plastic around the rim of the hole to hold the cone securely in place and to prevent water vapor losses. Straighten the plastic to form a neat cone with an angle of about 30 degrees so that the water drops will run down and fall into the container in the bottom of the hole. It takes about one hour for the air to become saturated and start condensing on the underside of the plastic cone.

The basic materials for setting up your own survival still are:

A 6 x 6 foot sheet of clear plastic.

Flight helmet, bucket or something to catch water.

Flexible plastic tubing (about 5 feet).

You can manage without the plastic tubing, but it allows you to drink water without removing the bucket from the hole.

- Because the plastic is slightly roughened drops of water cling to it better than they do to ordinary plastic. Thus, water sticks to the plastic, runs down to the bottom and drops into the bucket instead of onto the ground.
- It is possible to roughen the surface of other plastics such as Mylar with very fine wet or dry sandpaper.
- Vapor should soon cloud the underside of the plastic and drops should begin to trickle down toward the bucket. Do not expect to begin drinking water immediately. The least you should have in 24 hours is a pint; however, a quart or more may be obtained.

The "still" may also become a possible source of food. The water container under the plastic attracts snakes and small animals, which crawl down the top surface of the plastic and then cannot climb back out.

Now that you have read this item, go out and practice the information. Substitute a bucket for your helmet.

9th Combat Brigade (Air Attack)

Air-To-Air

A Rude Awakening

MONTHLY WRITING AWARD

U.S. ARMY AVIATION DIGEST

Two AH-1 Cobras in combat spread, Yuma, AZ, D Troop, 3/5 Cavalry.

CW3 David P. Klindt
3d Squadron, 5th (U.S.) Cavalry
Fort Lewis, WA

CW3 Victor D. Mustoe
3d Squadron, 5th (U.S.) Cavalry
Fort Lewis, WA

THE FOLLOWING air-to-air war story actually occurred, to which 11 aviators of the 3/5 Cavalry can attest. It happened recently when the days were filled with an underlying current of tensions as the scout gun team worked in an entirely new and foreign environment. Unlike the wet and cloudy weather we were used to at Ft. Lewis, WA, this area was hot and dry. The sun settling in the west made it hard to search the rolling desert for the enemy. Adding to the anxiety was the fact that we were aware that threat aircraft were working the same area and had been sighted earlier in the day.

Our mission for the day was to perform a zone recon of a broad desert valley between the Cargo Muchacho Mountain to the west and the Chocolate Mountains to the east. We would be working to the southwest, directly into the sun. As my wingman and I approached the LD (line of departure) my mike cracked to life, "07, 08: We will be working the drainage to your 9 o'clock, one ridge line over. Ready when you are."

"Roger, try and stay abreast as we go for mutual support if we encounter any threat."

With that we moved into our respective terrain features, and proceeded cautiously to the southwest. The ridge that separated my wingman from me had numerous saddles which allowed us to maintain eye contact occassionally. We were approaching PL (Phase Line) Alpha when I got the call, "07, we have a bogey left, 11 o'clock, 4,000 meters coming in from the southwest; I just caught his rotor flash."

"Roger, hold and hide and maybe he'll bypass you."

I made a quick check of the armament switches to ensure they were in the right position just in case I had to use them as a last resort.

"07, we are engaged! He is rolling in on us, 12 o'clock, 3,500 meters, we're going for maneuvering speed."

I pulled in all available power and nosed the AH-1 Cobra over. I knew that if my wingman had learned his lessons well he would be doing the same and would start jinking and maneuvering to engage the enemy and to set him up for me as soon as he had airspeed. From the reported position of the bandit, I knew he must be coming up the same valley as my wingman, perfect positioning for me to make a wingover attack. Through a break in the ridge, I caught a glimpse of the bandit, looming ominously on the horizon as he

bore in with his attention seemingly riveted on my wingman.

Estimating the bandit's closure rate would be tough, with the ridge between us; so luck was going to play in this engagement. I caught another glimpse of the big ugly chopper as it passed my 10 o'clock: Time to make my pull-up.

"07, he's within range, hurry and make your move!"

My wingman was getting nervous, the tenor in his voice climbing an octave or two. With the stick back, I traded airspeed for altitude. Popping up above the ridge I found my target right where he needed to be, 9 o'clock and 100 feet AGL (above ground level), oriented intently on my wingman. A hard left bank brought me within position on the aggressor's tail and slightly above his flight path. At 300 feet distance he would be hard to miss. I flipped my radio to channel three and transmitted, "Guns, guns, guns; knock it off; you're dead Silky."

The "Aggressor" Cobra was flown by CW2 "Silky" Glasgow and try as he did, he was not able to see us on his tail."

"Hey Bubbas, let's knock it off for the day," said Major Lou Russo, our Marine instructor from Marine Aviation Weapons and Tactics Squadron One. "You guys are getting too good for us."

The incident related was just one of the many that occurred during our 10-day short course in air-to-air evasive maneuvers at the Marine Aviation Weapons and Tactics School at Yuma, AZ. Our days were packed with classroom and airwork, all taught in the language of Marine nautical terms: i.e. "port" and "starboard." This course was attended by 11 aviators of the 3/5 Cavalry, 9th Cavalry Brigade (Air Attack). The trip and training were accomplished because of the realization that a chance encounter with enemy slow or fast movers is probable. Moreover, what does a crewmember do if the enemy doesn't decide to leave you alone but instead attacks?

The U.S. Marines currently have the only school available and the trip proved to be well worth the expense. (See "Victory In Air-To-Air Combat, The Marine Corps Way," July 1982 *Aviation Digest.*) The school started with ROE (rules of engagement). These are the rules that govern the safety parameters of the engagements. The capabilities, limitations and tactics for enemy aircraft were discussed at great length. The morning briefings included the following subjects: mission, flight planning, communications, weapons, weather, emergencies and special instructions. The flights took off on schedule and were accomplished as briefed. The missions started with basic turns and how to lead and maneuver teams. The next step was one vs. one (one helicopter versus one helicopter) teaching basic maneuvering techniques. After these

Two AH-1s versus one OH-58. The latter (far right) is very difficult to detect.

techniques were mastered, two vs. one, one vs. two and one vs. one (jet) were accomplished. Three aviators were selected for additional training to become IPs (instructor pilots) for evasive maneuvers. It's noteworthy that aviators with all levels of experience, from 250 to 2,500 hours, attended the school and performed well. The primary consideration is that all aviators must be extremely competent in their aircraft and be able to "feel" it through the maneuvers.

The 3/5 Cav is attempting to train its aviators in self-defense from enemy aircraft attacks. The program of instruction for the training includes: AN/ALQ-144 use and operation, APR-39 use and operations, look out doctrine and standing operating procedures, rules of engagement, tactics, maneuvers, threat aircraft-air defense, target identification and range estimation, and air-to-air gunnery. The flight periods include, turns, one vs. one, two vs. one, two vs. one (free), one vs. one (jet A-10 or F-15), two vs. one and gunnery with the course lasting 5 days. Extensive use of the Red Eye Gunnery simulation is expected to enhance our training. The training includes the development of tactics to enable the Cav to still perform its mission and yet be able to self-defend. The training already received highlights the need to "not be seen" by proper use of cover and concealment.

Some interesting points learned so far, are that the main rotor hub and yellow paint on the inside of the dog house (opening in fuselage near the rotor) are major attention getters for the fast movers and the OH-58 is next to impossible to see. The shortcoming of nap-of-the-earth and being engaged is that it takes up to 20 seconds to accelerate to maneuvering speed. Twenty seconds is a long time in air-to-air with another helicopter. These problems and several others are currently being worked out by this squadron.

This training is structured so as not to be another problem for the commanders. Training time and money are paramount in the development of this training and we feel that a viable training program is at hand. The skills learned are not perishable and will not tie up the aviation training. A long, involved aircrew training manual program iteration schedule has been avoided.

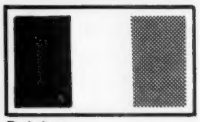
Anyone with aviation experience and a working knowledge of Soviet aviation tactics must agree that a very real possibility exists for contact with enemy aircraft on the battlefield. Moreover, the U.S. Air Force will not have 100 percent air superiority and the aviation line units will be responsible for self-defense. Our most important tactic for self-defense is cover and concealment. Only after all other possibilities are exhausted should an aircraft become engaged. The use of the AN/ALQ-144 jammer and proper air-to-air maneuvering will be necessary. These facts can no longer be ignored by aviation leaders. From aircrews on up the line it must be understood and immediately resolved.

ABOUT THE AUTHORS

CW3 Klindt received his wings in August 1971 after which he attended the AH-1G transition in Savannah, GA. He then was stationed with 33d FA (ARA) at Ft. Sill, OK, for the following year. After a short tour in Vietnam with D/17 CAV, Mr. Klindt was assigned to C Troop, 3d Squadron, 5th (U.S.) Cavalry, Ft. Lewis, WA. Mr. Klindt served in this unit as the squadron aviation life support equipment officer and search and rescue coordinator until July 1975. He next went to Ft. Rucker, AL, for the AH-1, IPC, WOAC, TOW Course, Boot Strap, and the 6 weeks Air Force ALSE School at Chanute AFB, IL. CW3 Klindt then PCSd to Germany to the USAREUR Aviation and Standardization Board as the Chief of the USAREUR ALSE Program. After 3 years he returned to the 3d Squadron, 5th (U.S.) Cavalry, Ft. Lewis, WA. Currently CW3 Klindt is the D Troop AH-1S (MC) instructor pilot and the point of contact for air-to-air tactics.

CW3 Mustoe has been associated with Army Aviation since 1 August 1967. Upon graduation from flight school he was assigned to the 11th ACR in Vietnam. Upon completion of this tour of duty he was assigned to the 349th AV Co, 16th AV Battalion at Ansbach, Germany, serving as the unit's instrument instructor and section leader in the CH-34s. Terminating service in February 1970, he continued to be interested in aviation, acquiring a private pilot license in fixed wing. Mr. Mustoe also served with the Wyoming ARNG. Action during this period included search and rescue operations during the Mount St. Helens disaster of 1980. Returned to active duty in September 1980 and served with the 3d Squadron, 5th (U.S.) Cavalry at Ft. Lewis, WA. Rated in both the OH-58 and AH-1S he is active in instructing in the air-to-air section of D Troop.

RSI Report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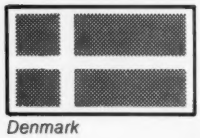
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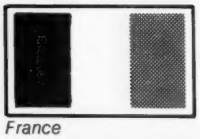
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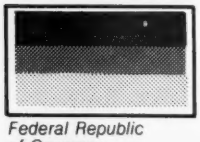
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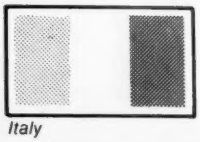
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Aviation units that may be required to operate as a joint national force should be aware that the U.S. Army has ratified a NATO standardization agreement (STANAG 3628, Helicopter Tactical Refueling) that dictates the procedures for tactical refueling of helicopters. As a signatory to this agreement it is incumbent upon Army Aviation units to abide by the terms of the STANAG. Units are encouraged to use this document as a guide for the development of their standing operating procedure (SOP).

Units which are subject to this agreement are encouraged to validate the content of the STANAG. If it is determined that there are terms of the agreement which should be considered for changes, a standard DA Form 2028 should be submitted.

STANAG 3628
Helicopter Tactical Refueling

1. Aim. The aim of this agreement is to standardize refueling procedures for rotary wing aircraft in a tactical environment.

2. Agreement. Participating nations agree, consistent with availability of equipment, to apply the procedures outlined herein to tactical refueling of helicopters.

3. General. There is an essential requirement that data on the compatibility of fuels, equipment and procedures be readily available to member nations for effective employment of helicopters during tactical operations. It is recognized that member nations have in use a wide variety of helicopters and equipment which must be considered when implementing this standard.

4. Responsibilities. Normally, the supported force unit will arrange for providing the supporting helicopter unit with the following:

a. POL products (based upon previous coordination).

b. Sites for refueling.

c. Security of POL products, associated equipment and personnel.

d. Fire fighting facilities.

5. Responsibilities. Where it is necessary to pre-stock forward areas to provide helicopter refueling points, the supported force commander should arrange, through the appropriate logistical command, for the delivery of fuel to the refueling points, and for the equipment and personnel necessary to pump the fuel from the storage container to the aircraft. The supported unit (Helicopter Crew) is responsible for supervising the safe refueling of the aircraft. In this effort, the helicopter unit commander will make recommendations to the support ground force commander regarding the desired time, place and quantity of fuel.

6. Compatibility of Equipment. Tactical refueling can be accomplished by the use of numerous types and combinations of equipment. Although compatibility of equipment does not exist among all member nations, six basic items necessary are:

a. Fuel Reservoir.
b. Fuel Pump.
c. Filter Separator.
d. Flexible Hose.
e. Fuel Nozzle.
f. Bonding and Earthing.

7. Refueling. Two methods of refueling are normally used:

a. *Normal Refueling* is a means of refueling helicopters with engines and all systems not related to refueling inactive, and the aircraft vacated by all personnel.

b. *Rapid Refueling* is a means of refueling helicopters with engines running and rotors running or stopped. Nonessential systems are switched off and, where possible, all passengers dismounted from the helicopter before refueling is commenced. This method requires positive ground control of the aircraft movement, standardized refueling equipment and techniques, and coordination between refueling personnel and aircraft crews.

c. Both methods of refueling may use open or closed circuit refueling equipment or systems.

d. As in-flight techniques develop, in-flight refueling may at times be used tactically in the future.

8. Operational Consideration of Tactical Refueling. The purpose of tactical refueling is to provide a safe, expeditious means of refueling helicopters during an operation. The following factors should be considered when producing unit refueling SOPs or regulations:

a. The need to adhere strictly to fire and safety precautions.

b. Refueling points to conform to the prescribed requirements of landing areas for day and night operations.

c. Provision of the best disposition of landing points to accommodate the type and number of helicopters to be refueled.

d. Whenever possible a thorough briefing should be given to all crews prior to refueling.

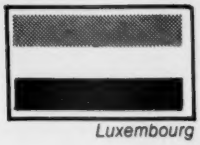
e. Visual or R/T intercommunications to be maintained throughout the refueling operation. No outside radio transmissions should be made while refueling.

f. Individual responsibilities and delineation of tasks to be clearly defined.

g. When colocated with a rearming point, protect against the danger of inadvertent detonation of one class of supply by the other.

h. When required, designate a safe disarming area for malfunctioning helicopter weapon system repair.

If this article has generated any questions or requirements, please contact Mr. Rush Wicker by writing: Commander, U.S. Army Aviation Center, ATTN: ATZQ-D-CC, Ft. Rucker, AL 36362.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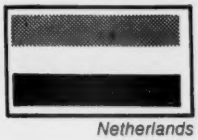
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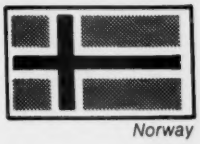
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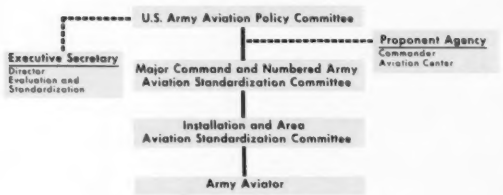
STANDARDIZATION HIERARCHY

THE EFFECTIVENESS of the U.S. Army Aviation Standardization Program is directly proportional to those efforts made to establish good communications throughout the aviation standardization hierarchy. This means keeping everybody informed—up and down the line, even to the smallest aviation unit and even further, to each crewmember.

Granted, the Directorate of Evaluation and Standardization (DES), Aviation Center, has an open-door communication policy and a worldwide aviation standardization evaluation and assistance mission. But all too often requests from the field for aviation standardization assistance are received or responded to without the knowledge of intermediate commands and aviation standardization boards. Potentially, this could allow the effectiveness of the Army's standardization hierarchy to be undermined.



Here is the message: "You bet we want to provide aviation standardization support requested by units in the field," but this effort must complement the established aviation standardization hierarchy emanating from the lowest level to the highest. This doesn't have to slow down your request for standardization assitance. Just funnel your requests through your normal aviation standardization channels with an information copy to DES. DES will start the required action and informal coordination while awaiting major Army command comments/concurrence. It is just good military business to keep your "next higher" informed about your local standardization activities.

We are all in the aviation standardization business together. To function properly and successfully, all elements in the hierarchy must, therefore, be kept informed. For your information, the accompanying figure broadly outlines the standardization hierarchy; keep all the levels informed.

The ultimate goal of the Department of the Army Aviation Standardization Program is to improve combat readiness. Standardization, realistic training and accident prevention are the means to that end. Through Flight Standardization Evaluation Teams' visits and Aviation Standardization and Training Seminars (ASTS), DES will provide training assistance and gather feedback. Both evaluation and training assistance are equally important to our success in standardization.

Each member of our aviation team must be dedicated to excellence and high standards as we embark upon fiscal year 1984. Aviation, the Army's newest branch, and now a full-fledged member of the combined arms team, must put its best foot forward through aggressive accident prevention programs and a strong commitment to improve individual and unit proficiency.

DES welcomes your inquiries and requests to focus attention on an area of major importance. Write to us at: Commander, U.S. Army Aviation Center, ATTN: ATZQ-ES, Ft. Rucker, AL 36362; or call us at AUTOVON 558-3504 or commercial 205-255-3504. After duty hours call Ft. Rucker Hot Line, AUTOVON 558-6487 or 205-255-6487 and leave a message

MEDICAL DISQUALIFICATIONS

Lieutenant Colonel Bob Vandel
Chief, Aviation Plans and Programs
Military Personnel Center
Alexandria, VA

There is a saying about rumors which goes something like this, "Pick the one you like best and stick with it. If there are none you like, make up your own and get it going." Well it appears that someone didn't like what was heard and got a rumor going that says all medical waivers are being denied. As you can imagine, this rumor has caused havoc in the aviation community. The number of aviators going on sick call has dropped dramatically as aviators either go without medical attention, self-medicate or go to civilian physicians who are not trained in aerospace medicine.

Let's set the record straight. Each of us recognized that to get accepted into aviation we had to pass a very rigorous physical exam. The physical requirements were necessary to ensure that the Army had personnel who were physically capable of performing demanding flight duties in the safest possible manner in all contingencies. Once in aviation training, and continuing throughout an officer's military aviation career, medical requirements are relaxed to a Class II flight physical standard. Each of us, as we entered the aviation program, understood that our continuance in the program was dependent at least in part on our ability to maintain the Class II standard.

The Army understands and accepts the fact that during the normal aging process the body will deteriorate and some aviators will no longer be able to meet medical standards; however, others will remain completely qualified. It is further recognized that some disqualifying physical deficiencies will not seriously degrade the aviation mission nor aviation safety. Those officers, who have waiveable physical maladies, are continued in aviation service when there are insufficient fully medically qualified aviators to satisfy requirements. To regulate this process, the Army has established a policy by which waivers may be granted for medically disqualifying conditions when recommended by the Army Aeromedical Center at Ft. Rucker, AL, *and* when necessary to meet Army requirements.

Having said all that, let's turn our focus to the two separate actions which gave rise to the rumors. To understand the two actions we must first separate the classes of waivers. First is the routine waiver *request* and second is the *existing* waiver. Due to the need to validate an Army requirement prior to granting a waiver, a close scrutiny of all waiver *requests* took place. To be in compliance with existing regulatory guidance, review of each requestor's file was conducted in an attempt to identify specific requisite qualifications (instructor pilot, instrument flight examiner, etc.). Failure to find such qualifications resulted in the grounding of 13 aviators from mid-February 1983 to mid-May 1983. Despite being in line with Army policy this action sent the wrong signal to the field. Aviators were sensing that a visit to the flight surgeon meant laying one's aviaton career on the line. This had obvious safety implications and because of it the course was reversed in late May with resumption of the previous waiver granting policy.

The second action, vacating *existing* medical waivers, was precipitated due to Budget End Strength considerations. We are experiencing a higher retention rate in the warrant force than was anticipated. This is due, at least in part, to the depressed economy. With the aviation force overaligned, the Army is prevented from accessing tech service warrants in critically short military occupational specialities. This meant that to correct the situation the Army had to bring the aviation warrant officer force into alignment. With aviation warrants in excess of Army requirements and many warrants with medical waivers in effect, the Army was in an untenable position. We began a categorical review of all medical waivers to determine, in view of requirements, which waivers were justified in their continuance. The methodology was to identify those individuals who most severely limited the readiness and deployability of the Army during a national emergency and then vacate those waivers. It was the collective opinion of the leadership in the Army's medical, personnel and aviation community that aviators who are restricted to flight with a copilot are the most severely limiting population and that their waivers should be vacated. This action resulted in the vacation of some 20 waivers. No other categories of waivers have been identified and no further action is anticipated which would further curtail medical waivers.

Now that the air is clear, pass the word. Let's stop the rumors and get medical attention when required from your flight surgeon. He is the one that was the most vocal and initiated action to reverse the action of denying of routine waivers.

U.S. Army Communications Command
ATC ACTION LINE

BE A TEAM PLAYER

Mr. Kenneth S. Arnold
U.S. Army Air Traffic Control Activity
Aeronautical Services Office
Cameron Station, Alexandria, VA

THE MOST SERIOUS consideration in aviation safety today is traffic congestion. At Newark recently, in foggy weather, we had to land 10 airplanes in 30 minutes. That is a landing every 3 minutes and that was done without one plane bumping into another."

That quote comes from testimony before Congress on 30 April 1936, less than a year after the world's first major midair collision in which 49 people died in Moscow. It also came less than a year after the world's first "air traffic control" began operating at Newark airport. That first ATC system was the forerunner of a system which was to grow and keep airplanes apart successfully for 20 more years before the United States was to experience its first midair over the Grand Canyon in June of 1956.

Since the Grand Canyon catastrophe, we have established many additional safety programs and procedures such as areas of positive control at higher altitudes, TCAs, TRSAs, MOAs and MTRs.

These are just a few of the safety enhancements integrated into our system since 1956, and all have contributed to the reduction of midair collision potential. However, 90 percent of the personnel in a cross section of the flying public answered "NO!" when asked, "Do you think current safety procedures permitting both commercial airlines and private aircraft to use the same airspace are adequate?

The ATC system provides professional controllers to operate its control towers and GCAs. First class, mission-oriented equipment is provided to help the controller do the job. *But,* there is one additional element with which the controller must deal—*the pilot!* These two must work as a team at all times in order for the system to function as intended.

Every air traffic controller and pilot knows the definitions of air traffic, air traffic clearance and air traffic control. The definition of "pilot in command" is stated as, "The pilot responsible for the operation and safety of an aircraft during flight time." If you know the definition of "flight time," you will have a pretty good understanding of just when this need for teamwork between pilot and controller begins and how long it lasts. (Ironically, the most disasterous midair?? collision in aviation history occurred *on the ground!* Perhaps you will recall the Tenerife calamity, or more recently, the Madrid accident.) This teamwork is manifested by the professional controller talking to the professional pilot. The controller is normally quite busy, responding to several aircraft both on the airport and airborne. The controller needs air time to direct air traffic more than needing to be wished or wishing the pilot a "good morning."

Controllers need the pilot's information, short, accurate, and to the point, more than they need to have the cockpit mike switch used as a "press to think" device. They usually need three items of information, and, from the professional pilot, that is what they get—identification, position and request. What do the pilots need from the controller? They need response, acknowledgement of the request and clearance—*all with proper phraseology to preclude the slightest possibility of misunderstanding.*

Controllers can and will be as flexible as possible to the pilot's requests. They know their area of responsibility and what is going on within it. They won't be working the controller positions if they don't. So, if the pilot has a special request, the controller will approve it if the situation allows. Remember though, that the controller provides ATC service to aircraft on a first-come, first-served basis as circumstances allow. There are certain operational priorities that must be observed, such as air evacuation flight and search and rescue aircraft, but regardless of operational priorities, the controller has the safe operation of all aircraft within the area as top priority.

Most people are afforded the opportunity to learn from their mistakes. Pilots and controllers may perish (literally or professionally) from their mistakes. For this reason, *this team must exercise and maintain the highest degree of professionalism possible.*

Readers are encouraged to address matters concerning air traffic control to:
Director, USAATCA Aeronautical Services Office, Cameron Station, Alexandria, VA 22314

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